Amendments to the Claims

Claim 1 (Currently amended): A method for determining the susceptibility of a male pig to developing boar taint comprising:

(a) obtaining a liver sample from the male pig; and

(b) ~~detecting the levels of one or more enzymes selected from the group consisting of (i) CYP2E1; (ii) a thermostable phenol sulfotransferase that uses 2-naphthol as a substrate and (iii) a glucuronyl transferase that uses para-nitrophenol or 2-naphthol as a substrate, wherein high levels of CYP2E1 and/or high levels of a thermostable phenol sulfotransferase and/or low levels of a glucuronyl transferase indicates that the male pig has a reduced susceptibility to developing boar taint.~~detecting one or more of the following: immunologically detecting the level of cytochrome P450 (CYP2E1); detecting CYP2E1 enzymatic activity, detecting the rate of glucuronidation of para-nitrophenol or 2-naphthol, or detecting the rate of sulfation of 2-naphthol, wherein a higher level of CYP2E1, a lower rate of glucuronidation of para-nitrophenol or 2-naphthol, or higher rate of sulfation of 2-naphthol as compared to a male control pig with boar taint or a group of male control pigs with boar taint indicates that the male pig has a reduced susceptibility to developing boar taint.

Claim 2 (Cancelled).

Claim 3 (Currently amended): ~~A method according to claim 2 wherein levels of CYP2E1 and/or thermostable phenol sulfotransferase that are the same or higher than in a female control pig indicate that the male pig has a reduced susceptibility to developing boar taint.~~ A method for determining the susceptibility of a male pig to developing boar taint comprising:

(a) obtaining a liver sample from the male pig; and

(b) detecting one or more of the following: immunologically detecting the level of cytochrome P450 (CYP2E1), detecting CYP2E1 enzymatic activity, detecting the rate of glucuronidation of para-nitrophenol or 2-naphthol, or detecting the rate of sulfation of 2-naphthol, wherein a same or higher level of CYP2E1, a lower rate of glucuronidation of para-nitrophenol or 2-naphthol, or a same or higher rate of sulfation of 2-naphthol as compared to a female control pig indicates that the male pig has a reduced susceptibility to developing boar taint.

Claim 4 (Cancelled).

Claim 5 (Currently amended): [[A]]The method according to claim [[2]]1 wherein levels of cytochrome P450 (CYP2E1)~~CYP2E1~~ and/or ~~thermostable phenol sulfotransferase~~ rate of sulfation of 2-naphthol that are higher than the average levels of CYP2E1 and/or ~~thermostable phenol sulfotransferase in a~~rate of sulfation of 2-naphthol as compared to a group of male control pigs with boar taint indicate that the pig has a reduced susceptibility to developing boar taint.

Claim 6 (Currently amended): [[A]]The method according to claim [[4]]1 wherein levels of cytochrome P450 (CYP2E1)~~CYP2E1~~ that are two to three times higher than the average levels of CYP2E1 ~~in~~ as compared to a group of male control pigs with boar taint and/or rate of sulfation of 2-naphthol~~levels of thermostable phenol sulfotransferase~~ that are three to four times higher than the average rate of sulfation of 2-naphthol as compared to ~~levels of thermostable phenol sulfotransferase in~~ a group of male control pigs with boar taint indicate that the pig has a reduced susceptibility to developing boar taint.

Claim 7 (Withdrawn): A method for reducing or preventing boar taint comprising enhancing the metabolism of skatole in a pig.

Claim 8 (Withdrawn): A method according to claim 7 comprising enhancing the activity of the CYP2E1 enzyme in a pig.

Claim 9 (Withdrawn): A method according to claim 8 wherein the activity of the CYP2E1 enzyme is enhanced by administering

(a) a substance that increases the activity of the CYP2E1 enzyme; or

(b) a substance that induces or increases the expression of the CYP2E1 gene.

Claim 10 (Withdrawn): A method according to claim 8 wherein a nucleic acid sequence encoding a CYP2E1 enzyme is introduced into a pig.

Claim 11 (Withdrawn): A method according to claim 7 comprising enhancing the activity of the sulfotransferase enzyme in a pig.

Claim 12 (Withdrawn): A method according to claim 11 wherein the activity of the sulfotransferase enzyme is enhanced by administering

(a) a substance that increases the activity of the sulfotransferase enzyme; or

(b) a substance that induces or increases the expression of the sulfotransferase gene.

Claim 13 (Withdrawn): A method according to claim 11 wherein a nucleic acid sequence encoding a sulfotransferase enzyme is introduced into a pig.

Claim 14 (Withdrawn): A method according to claim 7 comprising inhibiting the activity of the glucuronyl transferase enzyme in a pig.

Claim 15 (Withdrawn): A method according to claim 14 wherein the activity of the glucuronyl transferase enzyme is decreased by administering

(a) a substance that decreases the activity of the glucuronyl transferase enzyme; or

(b) a substance that reduces or decreases the expression of the glucuronyl transferase gene.

Claim 16 (Withdrawn): A method according to claim 14 wherein an antisense nucleic acid sequence that is complementary to a nucleic acid sequence encoding a glucuronyl transferase enzyme is introduced into a pig.

Claim 17 (Withdrawn): A method of screening for a substance that enhances the activity of CYP2E1 comprising assaying for a substance which selectively (i) enhances CYP2E1 activity, or (ii) enhances transcription and/or translation of the gene encoding CYP2E1.

Claim 18 (Withdrawn): A method according to claim 17 comprising the steps of:

(a) reacting a substrate of CYP2E1 and CYP2E1, in the presence of a test substance, under conditions such that CYP2E1 is capable of converting the substrate into a reaction product;

(b) assaying for reaction product, unreacted substrate or unreacted CYP2E1; and

(c) comparing to controls to determine if the test substance selectively enhances CYP2E1 activity and thereby is capable of enhancing skatole metabolism in a pig.

Claim 19 (Withdrawn): A method according to claim 17 comprising the steps of:

(a) culturing a host cell comprising a nucleic acid molecule containing a nuclei acid sequence encoding CYP2E1 and the necessary elements for the transcription or translation of the nucleic acid sequence, and optionally a reporter gene, in the presence of a test substance; and

(b) comparing the level of expression of CYP2E1, or the expression of the protein encoded by the reporter gene with a control cell transfected with a nucleic acid molecule in the absence of the test substance.

Claim 20 (Withdrawn): A method of screening for a substance that enhances the activity of sulfotransferase comprising assaying for a substance which selectively (i) enhances

sulfotransferase activity, or (ii) enhances transcription and/or translation of the gene encoding sulfotransferase.

Claim 21 (Withdrawn): A method according to claim 20 comprising the steps of:

(a) reacting a substrate of sulfotransferase and sulfotransferase, in the presence of a test substance, under conditions such that sulfotransferase is capable of converting the substrate into a reaction product;

(b) assaying for reaction product, unreacted substrate or unreacted sulfotransferase; and

(c) comparing to controls to determine if the test substance selectively enhances sulfotransferase activity and thereby is capable of enhancing skatole metabolism in a pig.

Claim 22 (Withdrawn): A method according to claim 20 comprising the steps of:

(a) culturing a host cell comprising a nucleic acid molecule containing a nuclei acid sequence encoding sulfotransferase and the necessary elements for the transcription or translation of the nucleic acid sequence, and optionally a reporter gene, in the presence of a test substance; and

(b) comparing the level of expression of sulfotransferase, or the expression of the protein encoded by the reporter gene with a control cell transfected with a nucleic acid molecule in the absence of the test substance.

Claim 23 (Withdrawn): A method of screening for a substance that inhibits the activity of glucuronyl transferase comprising assaying for a substance which selectively (i) inhibits glucuronyl transferase activity, or (ii) inhibits transcription and/or translation of the gene encoding glucuronyl transferase.

Claim 24 (Withdrawn): A method according to claim 20 comprising the steps of:

(a) reacting a substrate of glucuronyl transferase and glucuronyl transferase, in the presence of a test substance, under conditions such that glucuronyl transferase is capable of converting the substrate into a reaction product;

(b) assaying for reaction product, unreacted substrate or unreacted glucuronyl transferase; and

(c) comparing to controls to determine if the test substance selectively inhibits glucuronyl transferase activity and thereby is capable of inhibiting skatole metabolism in a pig.

Claim 25 (Withdrawn): A method according to claim 20 comprising the steps of:

(a) culturing a host cell comprising a nucleic acid molecule containing a nuclei acid sequence encoding glucuronyl transferase and the necessary elements for the transcription or translation of the nucleic acid sequence, and optionally a reporter gene, in the presence of a test substance; and

(b) comparing the level of expression of glucuronyl transferase, or the expression of the protein encoded by the reporter gene with a control cell transfected with a nucleic acid molecule in the absence of the test substance.

Claim 26 (Withdrawn): A composition for reducing or preventing skatole metabolism comprising administering an effective amount of a substance selected from the group consisting of:

(a) a substance that increases the activity of the CYP2E1 enzyme;

(b) a substance that induces or increases the expression of the CYP2E1 gene;

(c) a substance that increases the activity of the sulfotransferase enzyme;

(d) a substance that induces or increases the expression of the sulfotransferase gene;

(e) a substance that decreases the activity of the glucuronyl transferase enzyme; and

(f) a substance that reduces or decreases the expression of the glucuronyl transferase gene.